

WE CLAIM

32. A communication system comprising:

a public switched telephone (PST) network;

an Internet protocol (IP) network;

a plurality of private branch exchanges (PBXs) at a plurality of locations,
the PBXs coupled to the PST network for routing telephone calls over the PST network;

a plurality of telephones coupled to the plurality of PBXs;

a plurality of voice gateways, each voice gateway coupled to one of the
plurality of PBXs through a call status-call control link and coupled to the IP network for
routing telephone calls over the IP network; and

feature networking means for providing voice communication features
among the plurality of locations over the IP network.

33. A communication system according to Claim 32, wherein the feature networking means comprises at least one of

means for a user to redirect an inbound call to a telephone in an alternate office other than the user's office;

means for a user to place a call from a telephone in an alternate office and have the user's caller ID sent to the call's destination;

means for directing to a user's primary office voice mailbox unanswered calls which have been redirected to an alternate office;

means for a user to redirect inbound calls to a PSTN telephone, said means including at least one of

means for a user to activate the redirection via a touch tone telephone,

means for a user to activate the redirection via a web browser

means for a user to select that only calls from a preselected set of users are redirected, the user performing the selection from one of

a web browser and a white pages directory or personal directory to perform the selection, and
a touch tone telephone,

means for a user to set up a schedule of when calls are redirected, and

means for a user to have unanswered redirected calls answered by the user's primary office voice mailbox;
and

means for a user to redirect inbound calls to an H.323 (IP)

telephone outside of the network, said means including at least one of

means for a user to activate redirection via touch tone telephone,

means for a user to activate redirection via a web browser,

means for a user to select that only calls from a preselected set of users are redirected, the user performing the selection from one of

a web browser and a white pages directory or personal directory, and a touch tone telephone,

means for a user to have unanswered redirected calls answered by the user's primary office voice mailbox, and

means for a user to activate network features from a remote location via a web browser on a portable workstation, the portable workstation comprising an H.323 telephone, said network features comprising at least one of

means for a user to make an outbound call using white pages via a browser on a portable workstation,

means for a user to use a call control PBX feature from a portable workstation, said call control PBX feature including at least one of

- dialing a call,
- answering a call,
- hanging up a call,
- transferring a call,
- conferencing a call,
- forwarding a call,
- placing a call on hold,
- removing a call from hold,
- and
- dropping a call,

means for displaying a caller's name on
the portable workstation,

means for callback on busy on the
portable workstation

means for do not disturb on the portable workstation, and

means for call alert on the portable workstation.

34. A communication system according to Claim 32, wherein the plurality of locations comprises locations within one company.
35. A communication system according to Claim 32, wherein the plurality of locations comprises locations within a plurality of companies.
36. A communication system according to Claim 32, wherein the feature networking means comprises callback on busy means to automatically setup a call between

a calling party and a called party after the calling party attempts to call the called party while the called party's telephone is busy, the call being setup when the called party hangs up.

37. A communication system according to Claim 36, comprising, coupled to a plurality of voice gateways, a respective plurality of desktop workstations, wherein the callback on busy means comprises means to display a message on the calling party's desktop workstation if the calling party's telephone is busy when the called party hangs up.
38. A communication system according to Claim 32, comprising coupled to a plurality of voice gateways a respective plurality of desktop workstations, wherein the feature networking means comprises do not disturb means for a user to select that only calls from a set of callers, the set preselected by the user, will ring the user's desktop telephone and all other calls will be forwarded to a forwarding target, the forwarding target preselected by the user.
39. A communication system according to Claim 38, wherein the forwarding target comprises one of
 - voice mail, and
 - an answering station.
40. A communication system according to Claim 32, comprising coupled to a plurality of voice gateways a respective plurality of desktop workstations, and call log means for displaying on a desktop workstation a log of outgoing calls from a telephone coupled to the PBX and incoming calls to the telephone.
45. A communication system according to Claim 32, wherein the feature networking

means provides PBX features among the plurality of sites over the IP network regardless of the PBX model used.

46. A communication system according to Claim 32, wherein the feature networking means provides PBX features among the plurality of sites over the IP network regardless of the desktop telephone set used.
47. A communication system according to Claim 32, comprising, coupled to a plurality of voice gateways, a respective plurality of desktop workstations.
48. A communication system according to Claim 47, wherein the feature networking means comprises caller ID display means to display name of a calling party at a called party's desktop workstation at the same time as the called party's telephone rings.
49. A communication system according to Claim 47, wherein the answering station means comprises call alert means to display a message from a calling party on the desktop workstation of a called party if the called party's telephone is busy.
50. A communication system according to Claim 47, wherein the feature networking means comprises answering station display means to display a message from an answering station on a called party's workstation when the called party's telephone is busy or forwarded to voice mail and the call is forwarded to the answering station.
51. A communication system according to Claim 47, wherein the feature networking

means comprises virtual desktop means, the virtual desktop means comprising at least one of

means for a user to redirect an inbound call to a telephone in an alternate office other than the user's office;

means for a user to receive a caller ID screen pop on a desktop workstation in an alternate office workstation identifying that a call is for that user, the caller ID screen pop including the name of the calling party;

means for a user to place a call from a telephone in an alternate office and have the user's caller ID sent to the call's destination;

means for a user to display a directory white pages in a web browser on a desktop workstation in an alternate office;

means for a user to use a web browser on a workstation in an alternate office to perform call control functions from the workstation;

means for a user to activate network features from an alternate office, the network features including at least one of

callback on busy,

call alert, and

do not disturb;

means for directing to a user's primary office voice mailbox unanswered calls which have been redirected to an alternate office;

means for a user to redirect inbound calls to a PSTN telephone, said

means including at least one of

means for a user to activate the redirection via a touch tone telephone,

means for a user to activate the redirection via a web browser

means for a user to select that only calls from a preselected set of users are redirected, the user performing the selection from one of

a web browser and a white pages directory or personal directory to perform the selection, and

a touch tone telephone,

means for a user to set up a schedule of when calls are redirected, and

means for a user to have unanswered redirected calls answered by the user's primary office voice mailbox; and

means for a user to redirect inbound calls to an H.323 (IP) telephone outside of the network, said means including at least one of

means for a user to activate redirection via touch tone telephone,

means for a user to activate redirection via a web browser,

means for a user to select that only calls from a preselected set of users are redirected, the user performing the selection from one of

a web browser and a white pages directory or personal directory, and

a touch tone telephone,

means for a user to have unanswered redirected calls answered by the user's primary office voice mailbox, and

means for a user to activate network features from a remote

location via a web browser on a workstation, the workstation comprising an H.323 telephone, said network features comprising at least one of

means for a user to make an outbound call using white pages via a browser on a workstation,

means for a user to use a call control PBX feature from a workstation, said call control PBX feature including at least one of

dialing a call,
answering a call,
hanging up a call,
transferring a call,
conferencing a call,
forwarding a call,
placing a call on hold,
removing a call from hold, and
dropping a call,

means for displaying a caller's name on the H.323 workstation,

means for callback on busy on the H.323 workstation

means for do not disturb on the H.323 workstation, and

means for call alert on the H.323 workstation.

52. A communication system according to Claim 51 , wherein the means for a user to redirect an inbound call comprises means to direct the inbound call to an alternate office telephone at another location.
53. A communication system according to Claim 47, wherein the feature networking means provides PBX features among the plurality of sites over the IP network regardless of the desktop workstation model used.
54. A communication system according to Claim 47, wherein the feature networking means provides PBX features among the plurality of sites over the IP network regardless of
- the PBX model used,
 - the desktop telephone model used, and
 - the desktop workstation model used.
55. A communication system according to Claim 47, comprising at least one of
- two different PBX models,
 - two different desktop telephone models, and
 - two different desktop workstation models.
69. A communication system according to claim 32 wherein the plurality of call status-call control links comprise at least one call status-call control link selected from a group consisting of a CTI link, a PRI interface, a QSIG interface, and an analog driver.
70. A communication system according to claim 32 wherein the feature networking means comprises a plurality of trunks, each of the trunks coupling one of the plurality of voice gateways to one of the plurality of PBXs, and wherein the plurality of trunks

comprise at least one trunk selected from a group consisting of a T1 trunk, an E1 trunk, and an analog CO trunk.

135. A communication system comprising:

a public switched telephone (PST) network;

an internet protocol (IP) network;

a plurality of private branch exchanges PBXs at a plurality of locations, the PBXs coupled to the PST network for routing a telephone call over the PST network;

a plurality of telephones;

a plurality of voice gateways coupled to the IP network for routing the telephone call over the IP network, each one of the plurality of voice gateways coupled to one of the plurality of PBXs via a call status-call control link, the plurality of voice gateways configured to provide voice communication features to users of the plurality of telephones.

136. A communication system according to claim 135 wherein the plurality of telephones include at least one PBX telephone coupled to one of the plurality of PBXs.

137. A communication system according to claim 135 wherein the plurality of telephones include at least one IP telephone coupled to the IP network.

138. A communication system according to claim 135 wherein the plurality of telephones include at least one PC-based IP telephone coupled to the IP network.

139. A communication system according to claim 135 wherein the plurality of voice

gateways are configured to provide voice communication features to the users via a plurality of workstations associated with of plurality of telephones.

140. A communication system according to claim 135 wherein the voice communication features include at least one feature selected from a group consisting of:

- dial by name;
- call transfer using directory;
- screen pop of caller name;
- call back when free;
- schedule call forwarding;
- call forwarding with filtering;
- remote setup of call forwarding;
- redirect on busy;
- redirect on unanswered;
- call log;
- call alert;
- call path replacement; and
- call conferencing by name.

141. A communication system according to claim 135 further comprising a directory coupled to the voice gateway, and wherein the voice gateway is configured to access the directory to provide voice communication features to the users of the plurality of telephones.

142. A method of operating a communication system having a plurality of telephones, a public switched telephone (PST) network, an internet protocol (IP) network, a plurality of private branch exchanges (PBXs) coupled to the PST network for routing telephone

calls over the PST network and a plurality of voice gateways coupled to the IP network for routing telephone calls over the IP network, the method comprising steps of:

coupling each voice gateway to one of the plurality of PBXs via a call status-call control link; and

providing voice communication features to users of the plurality of telephones.

143. A method according to claim 142 wherein the communication system further comprises a plurality of workstations associated with of plurality of telephones, and wherein the step of providing voice communication features to users comprises the step of providing the voice communication features to the users via the workstations.

144. A method according to claim 142 wherein the plurality of telephones include at least one PC-based IP telephone, and wherein the step of providing voice communication features comprises the step of making the voice communication features available to the users of the PC-based IP telephone.

145. A method according to claim 142 wherein the plurality of telephones include at least one PBX telephone coupled to one of the plurality of PBXs, and wherein the step of providing voice communication features comprises the step of making the voice communication features available to the users of the PBX telephone.

146. A method according to claim 145 wherein the step of providing voice communication features comprises the step of controlling the PBX telephone coupled to the PBXs with the voice gateway via the call status-call control link.

147. A method according to claim 142 wherein the communication system further comprises a directory integrated with the voice gateway, and wherein the step of

providing voice communication features comprises the step of accessing the directory.

148. A method according to claim 142 wherein the step of providing voice communication features includes the step of making available over the IP network at least one network feature selected from a group consisting of:

call hold;
call retrieve;
dial by name;
call back when free;
call forwarding;
call log;
caller ID;
caller name;
call alert;
call transfer;
call path replacement; and
call conferencing.

149. A communication system comprising:

a public switched telephone (PST) network;
an internet protocol (IP) network;
an IP telephone coupled to the IP network;
a private branch exchange PBX, the PBX coupled to the PST network for

routing a telephone call over the PST network; and

a voice gateway coupled to the PBX and to the IP network for routing the telephone call over the IP network, the voice gateway configured to make voice communication features available to the IP telephone over the IP network.

150. A communication system according to claim 149 wherein the voice gateway is coupled to the PBX via a call status-call control link.

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151. A communication system according to claim 149 wherein the IP telephone comprises a PC-based IP telephone.

152. A communication system according to claim 149 wherein the IP telephone comprises an H.323 compliant telephone.

153. A communication system according to claim 149 wherein the voice communication features include at least one feature selected from a group consisting of:

- dial call;
- call answer;
- call hold;
- call retrieve;
- caller ID;
- call transfer; and

call conferencing.

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